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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/866,996	05/25/2001	Atsushi Yamamoto	MTS-3255US	5806

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EXAMINER

NGUYEN, HOANG V

ART UNIT	PAPER NUMBER
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2821

DATE MAILED: 12/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/866,996

Applicant(s)

YAMAMOTO ET AL.

Examiner

Hoang V Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 4 and 6-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-14, 18, 23-39 and 43 is/are allowed.
- 6) ☒ Claim(s) 4, 6-9, 15-17, 19-22, 40-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 13.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 4, 6-9, 19-22, 40 and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Egashira et al (USP 5,539,418).

Regarding claim 4, Egashira (Figure 9) discloses an antenna comprising a conductive bottom member 90; a conductive side member 90; and a conductive member 60 arranged in a space 92 surrounded by the bottom member and the side member, wherein the conductive member is connected to a signal line 80 for transmission and/or reception, and the conductive member and the bottom member are connected to each other (via member 50 and 10) in a place other than the signal line or the feeding point.

Regarding claim 6, Egashira (Figure 9) discloses an antenna comprising a conductive bottom member 90; a conductive side member 90; and a conductive member 60 arranged in a space 92 surrounded by the bottom member and the side member, wherein the conductive member is connected to a signal line 80 for transmission and/or reception, and a conductive ceiling member 20 covering all or part of the space, wherein the conductive member extends its entire length normally of the conductive bottom member and the ceiling member.

Regarding claim 7, as applied to claim 6, Figure 9 of Egashira shows that the conductive member 60 and the ceiling member 20 are connected to each other electrically.

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Regarding claim 8, as applied to claim 6, Figure 9 of Egashira shows that the ceiling member and the side member are connected to each other electrically (via member 50 and member 10).

Regarding claim 9, as applied to claim 6, Figure 8 of Egashira shows that the ceiling member has a periphery having a curved shape.

Regarding claim 19, Egashira (Figure 9) discloses an antenna comprising a conductive bottom member 90; a conductive side member 90; and a conductive member 60 arranged in a space 92 surrounded by the bottom member and the side member, wherein the conductive member is connected to a signal line 80 for transmission and/or reception; and at least one matching element 50 is arranged apart by a predetermined distance from the conductive member, wherein the matching element and the bottom member are connected to each other electrically.

Regarding claims 20 and 21, as applied to claim 19, Figure 9 of Egashira shows that at least one of the matching element 50 is electrically connected to the conductive member 60 via a ceiling member 20.

Regarding claim 22, the antenna structure of Egashira would enable the method as claimed.

Regarding claim 40, Egashira (Figure 9) discloses an antenna comprising a conductive bottom member 90; a conductive side member 90; and a conductive member 60 arranged in a space 92 surrounded by the bottom member and the side member, wherein the conductive member is connected to a signal line 80 for transmission and/or reception, the bottom member has a feeding point on a surface thereof, and the conductive member and the bottom member are

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connected to each other (via member 50 and 10) in a place other than the signal line or the feeding point.

Regarding claim 42, Egashira (Figure 9) discloses an antenna comprising a conductive bottom member 90; a conductive side member 90; and a conductive member 60 arranged in a space 92 surrounded by the bottom member and the side member, wherein the conductive member is connected to a signal line 80 for transmission and/or reception; a conductive ceiling member 20 covering all or part of the space; and at least one matching element 50 which is arranged apart by a predetermined distance from the conductive member, wherein the matching element and the bottom member are connected to each other electrically.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 15-17 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egashira et al and Sanford (USP 6,160,522).

Regarding to claims 15 and 41, Egashira discloses the claimed invention except for a dielectric member having a permittivity higher than air provided in the space. Sanford (Figure 1) discloses an antenna comprising a conductive bottom member, a conductive side member, a conductive member arranged in a space surrounded by the bottom member and the side member, wherein the conductive member is connected to a signal line for transmission and/or reception,

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and a dielectric member having a permittivity higher than air provided in the space. It would have obvious to one of ordinary skill in the art to provide the Egashira antenna with a dielectric member having a permittivity higher than air provided in the space, as taught by Sanford, doing so would suppress higher order frequencies thus obtaining a desired antenna performance.

Regarding claim 16, as applied to claim 15, Figure 2 of Sanford shows that the dielectric member is provided at least so as to cover a part of the space which is not covered with the ceiling conductor.

Regarding claim 17, as applied to claim 15, Figure 2 of Sanford shows that the dielectric member fills the entire inside of the space.

***Allowable Subject Matter***

5. Claims 10-14, 18, 23-39 and 43 are allowed.

6. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 10, Egashira discloses an antenna comprising a conductive bottom member, a conductive side member, a conductive member arranged in a space surrounded by the bottom member and the side member, wherein the conductive member is connected to a signal line for transmission and/or reception, and at least one of the bottom member and the side member have openings. Egashira, however, fails to specifically teach that at least one of the bottom member and the side member has an opening other than an opening for the signal line.

Regarding claim 11, Egashira discloses an antenna comprising a conductive bottom member, a conductive side member, a conductive member arranged in a space surrounded by the bottom member and the side member, wherein the conductive member is connected to a signal

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line for transmission and/or reception, and a conductive ceiling member covering all or part of the space. Egashira, however, fails to further teach that the ceiling member has openings.

Claims 12-14 are allowed for depending on claim 11.

Regarding claim 18, neither Egashira nor Sanford further teaches, in combination with all the recited limitations, that the dielectric member has a via hole and the side member consists of the via hole.

Regarding claims 23 and 43, Egashira fails to further teach, in combination with all the recited limitations, a circuit for transmission and/or reception connected to the signal line and arranged in the space.

Claims 24-39 are allowed for depending on claim 23.


### *Correspondence*

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang V Nguyen whose telephone number is (703) 306-3444. The examiner can normally be reached on Mondays-Fridays from 9:00 a.m. to 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (703) 308-4856. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

8. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Hvn  
12/9/03

  
**HOANG V. NGUYEN**  
**PRIMARY EXAMINER**